

ORDA Data Quality Assessment

Lt Col George

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ROC Applications Branch

Data Quality Examples

- Problems fixed
 - Incorrect range normalization
 - Noisy data in the range folded region.
 - High reflectivity values caused by incorrect calibration.
 - Bad velocity values caused by initial problems with new hardware.
 - Bad velocity values caused by incorrect processing of VCP 121.
 - Incorrect range folding on upper tilts.

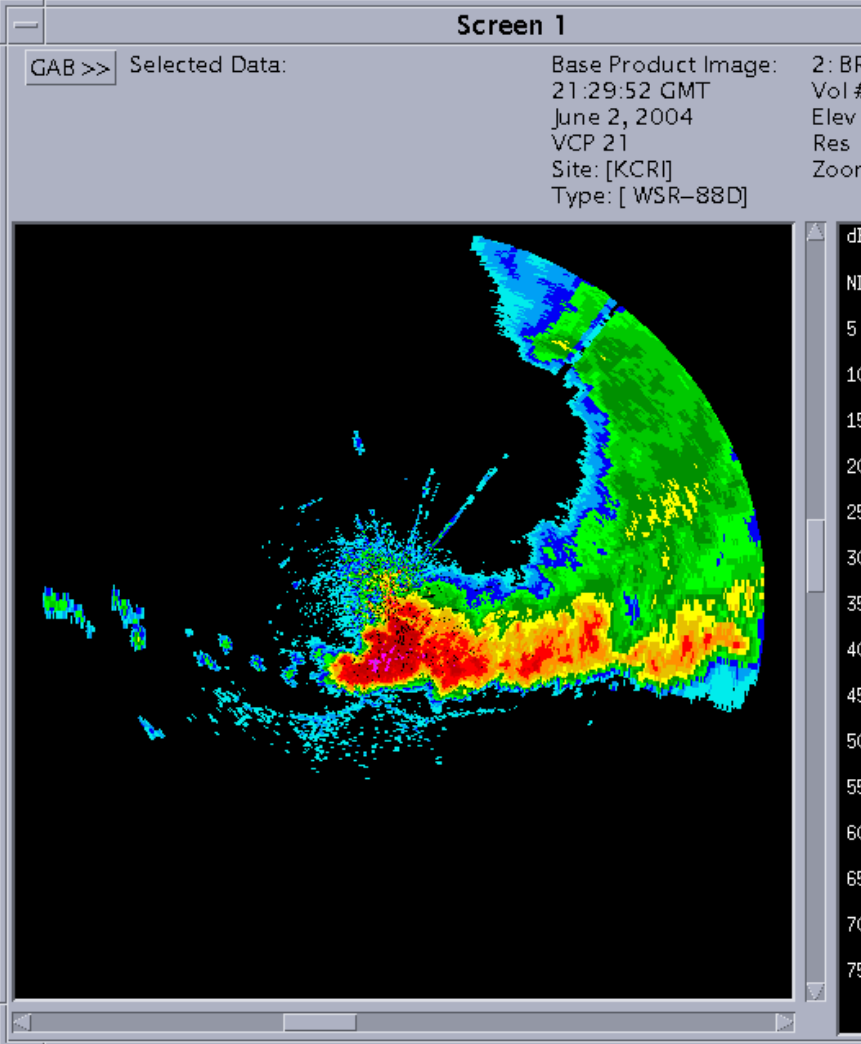
Data Quality Examples (cont)

- Problems remaining
 - Excessively high velocity values at higher tilts.
 - Excessively high spectrum width values at higher tilts.
 - Noise in velocity and spectrum width upper tilts.
 - Bad velocity values on upper tilts in VCP 31.

Data Quality Examples (cont)

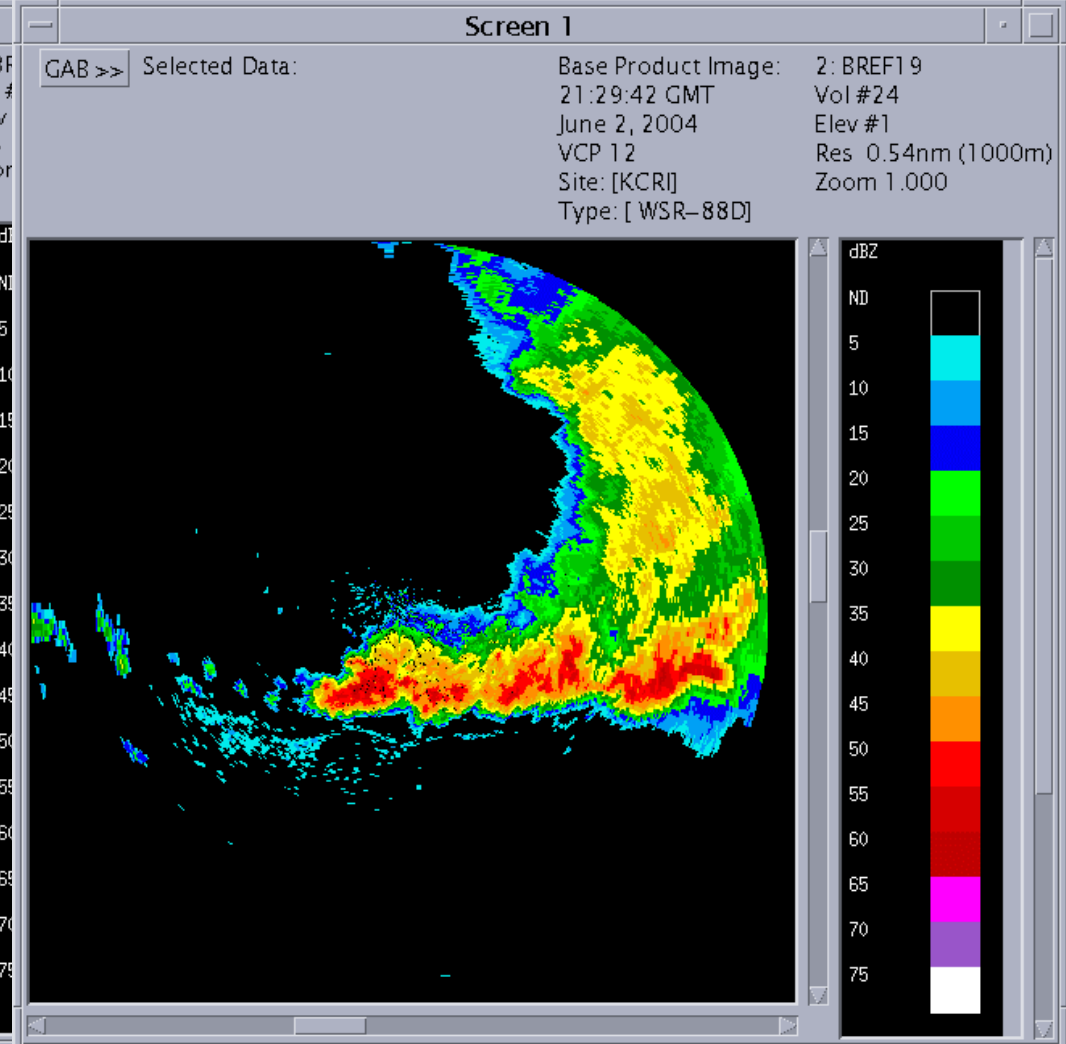
- Good looking data
 - Reflectivity comparison
 - Velocity comparison
 - GMAP filter example
 - REC example
- Algorithm comparison
 - Max VIL comparison
 - VWP winds at 2,000 ft

Problems Corrected



ORDA / T1
Reflectivity
VCP 21
2 June 2004
21:29:52 GMT

Incorrect range
normalization



KTLX / T1
Reflectivity
VCP 21
2 June 2004
21:29:42 GMT

Screen 1

GAB >>

Selected Data:

Base Product Image:

12:30:37 GMT

June 22, 2004

VCP 21

Site: [KCR]

Type: [WSR-88D]

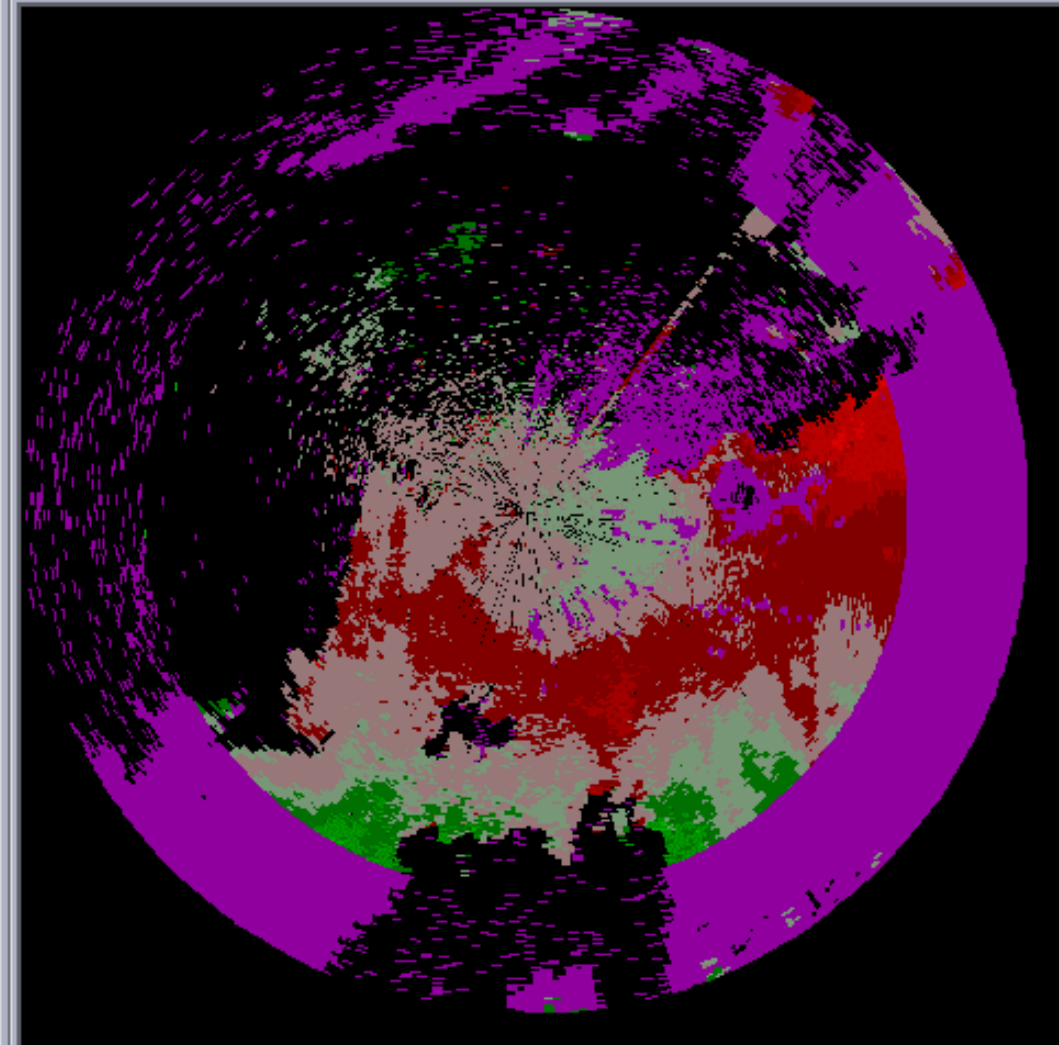
15: BVEL27

Vol #193

Elev #1

Res 0.54nm (1000m)

Zoom 1.000



kt

ND

-64

-50

-36

-26

-20

-10

-1

0

+10

+20

+26

+36

+50

+64

RF

Noisy data in the range folded region caused by incorrect processing.

Screen 1

GAB >>

Selected Data:

Base Product Image:

12:30:37 GMT

June 22, 2004

VCP 21

Site: [KCRI]

Type: [WSR-88D]

2: BREF1 9

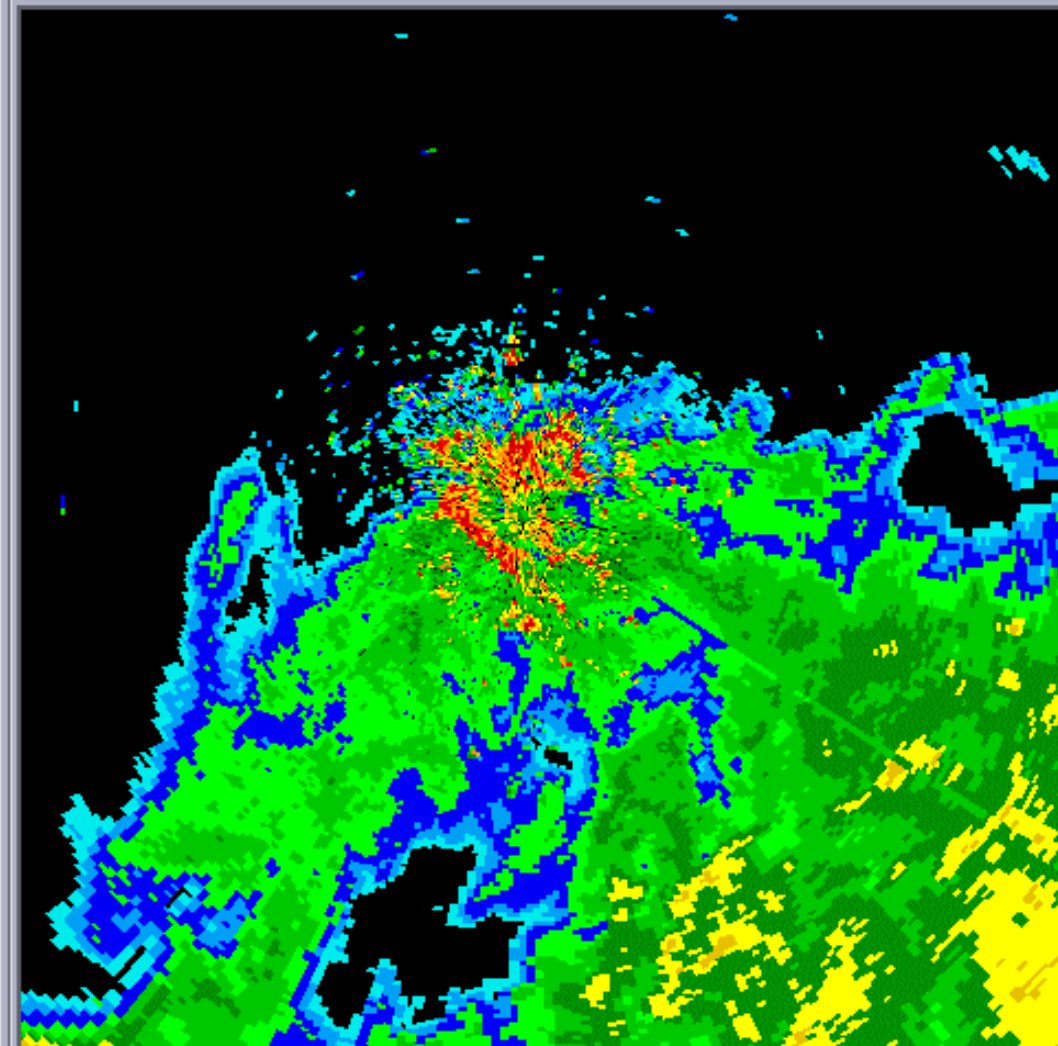
Vol #193

Elev #1

Res 0.54nm (1000m)

Zoom 2.000

High reflectivity
values caused
by incorrect
calibration.



dBZ

ND

5

10

15

20

25

30

35

40

45

50

55

60

65

70

75

Screen 1

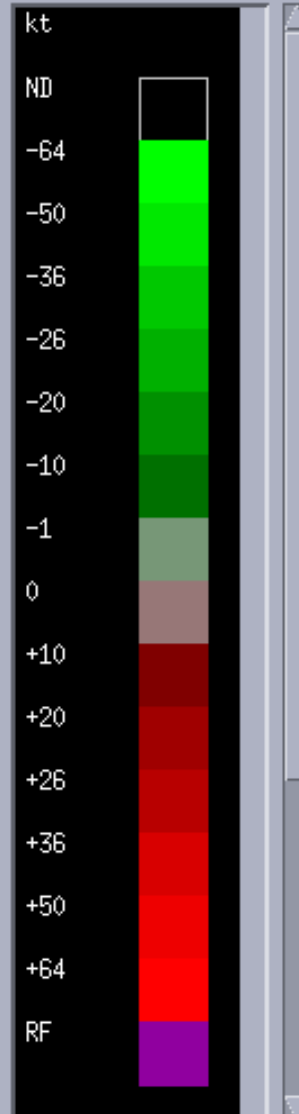
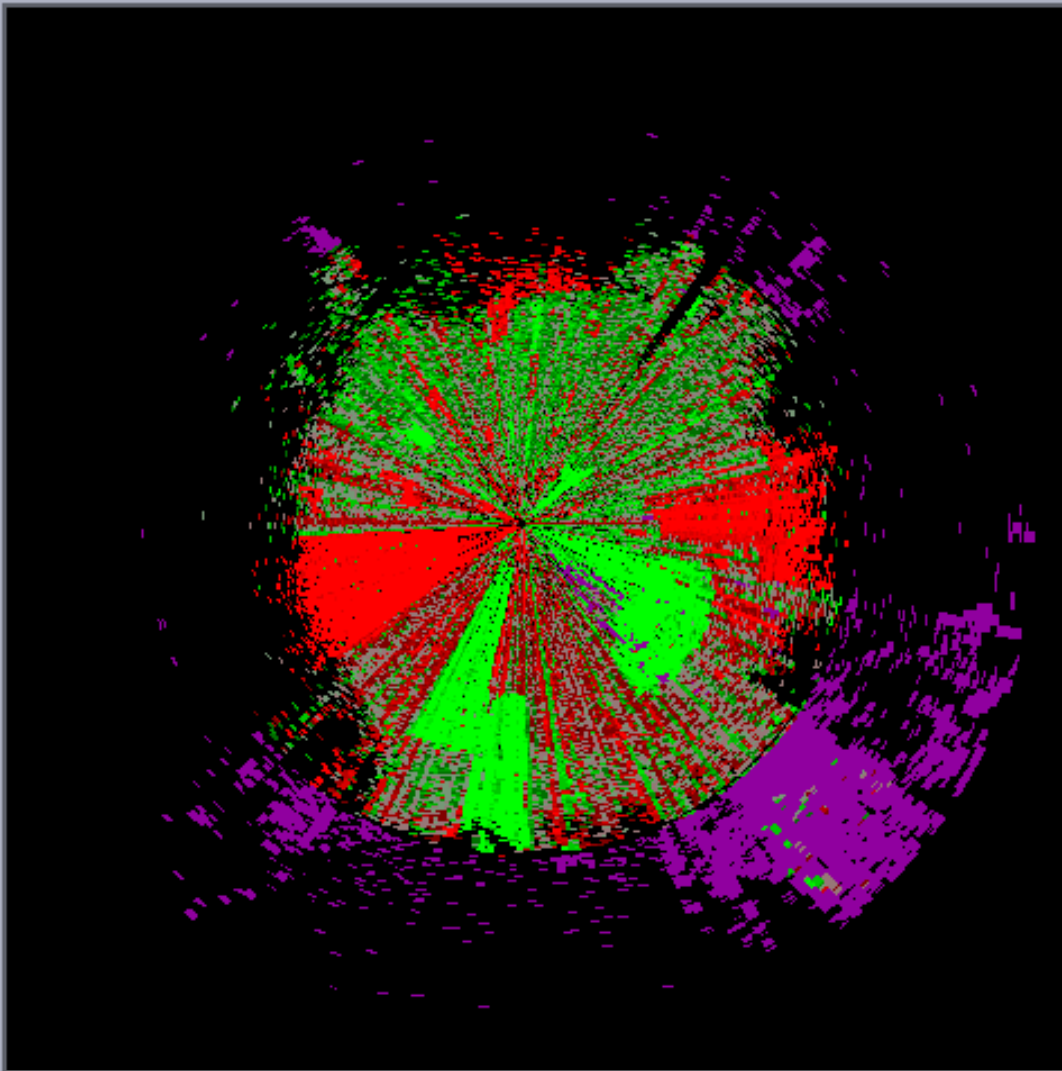
GAB >>

Selected Data: Radial # 89
X: 1010
Y: 888
Bin # 96
Bin Value: 12
Azimuth: 70.00
Range: 51.30NM
(95.00KM)

Base Product Image:
02:47:08 GMT
July 17, 2004
VCP 11
Site: [KCR] [KCR]
Type: [WSR-88D]

15: BVEL27
Vol #79
Elev #1
Res 0.54nm (1000m)
Zoom 1.000

Bad velocity values caused by initial problems with new hardware.



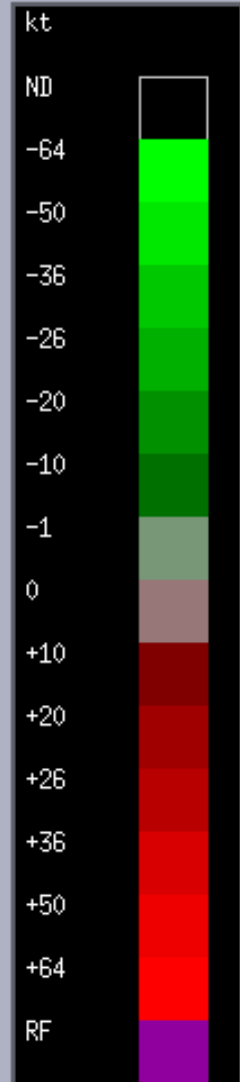
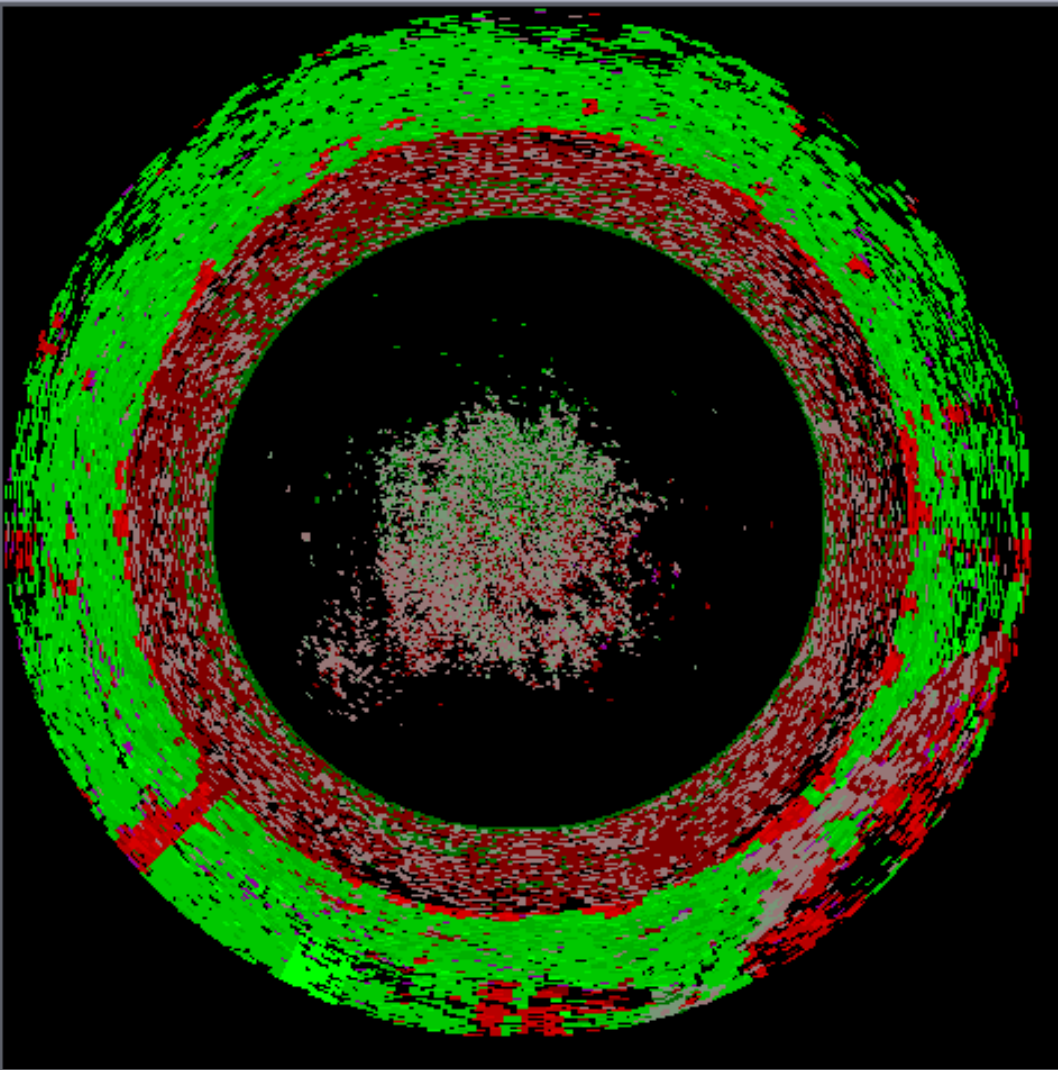
Screen 1

GAB >> Selected Data:

Base Product Image:
23:12:47 GMT
July 29, 2004
VCP 121
Site: [KCR] [KCR]
Type: [WSR-88D]

15: BVEL27
Vol #576
Elev #1
Res 0.54nm (1000m)
Zoom 1.000

Bad velocity
values caused
by incorrect
processing
of VCP 121.



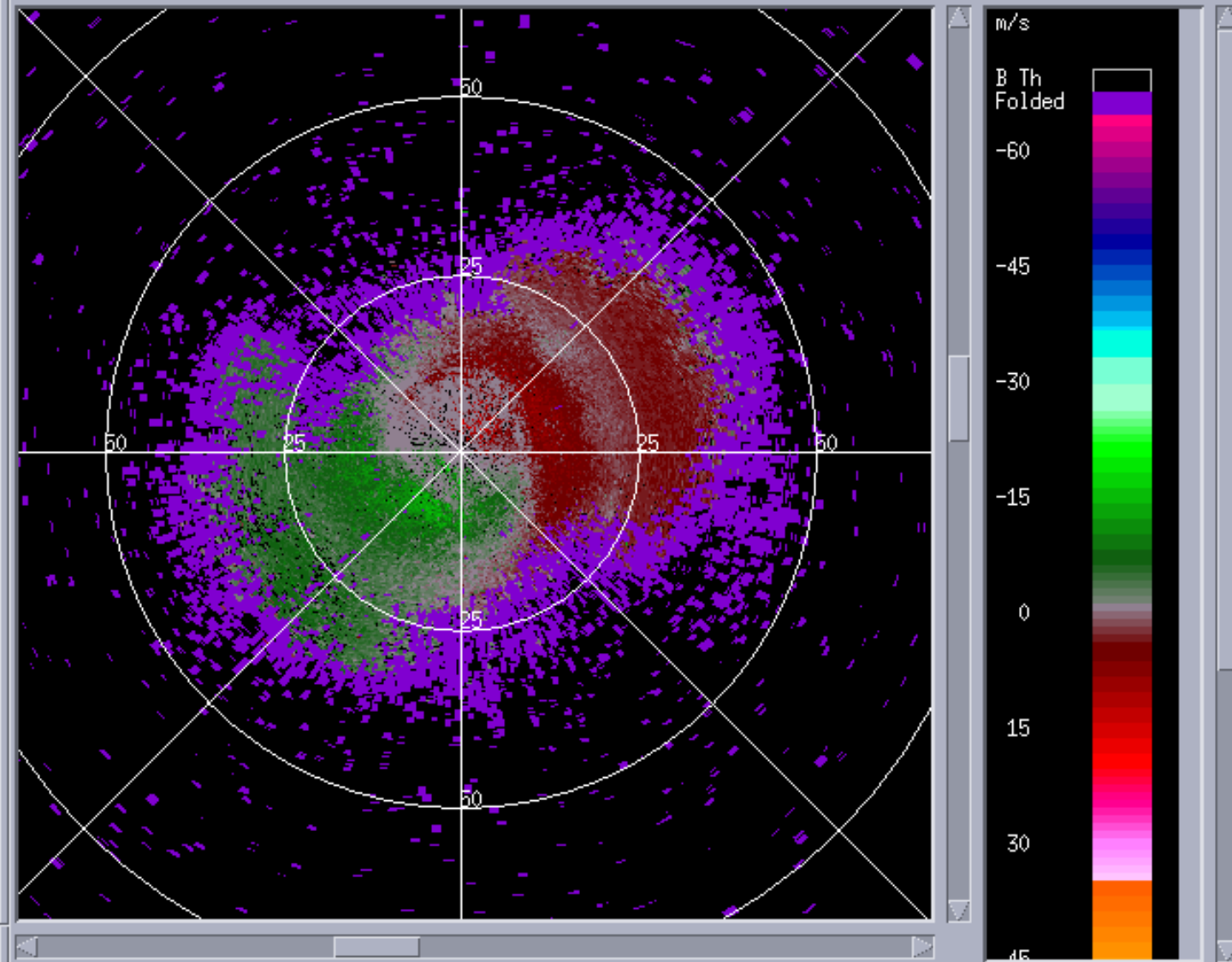
Screen 1

GAB >> Selected Data:

Base Product Image:
12:29:58 GMT
September 13, 2004
VCP 32
Site: [KCRI]
Type: [WSR-88D]

99: BVEL8BIT
Vol #876
Elev #3
Res 0.13nm (250m)
Zoom 0.500

Incorrect
range
folding on
upper tilts.



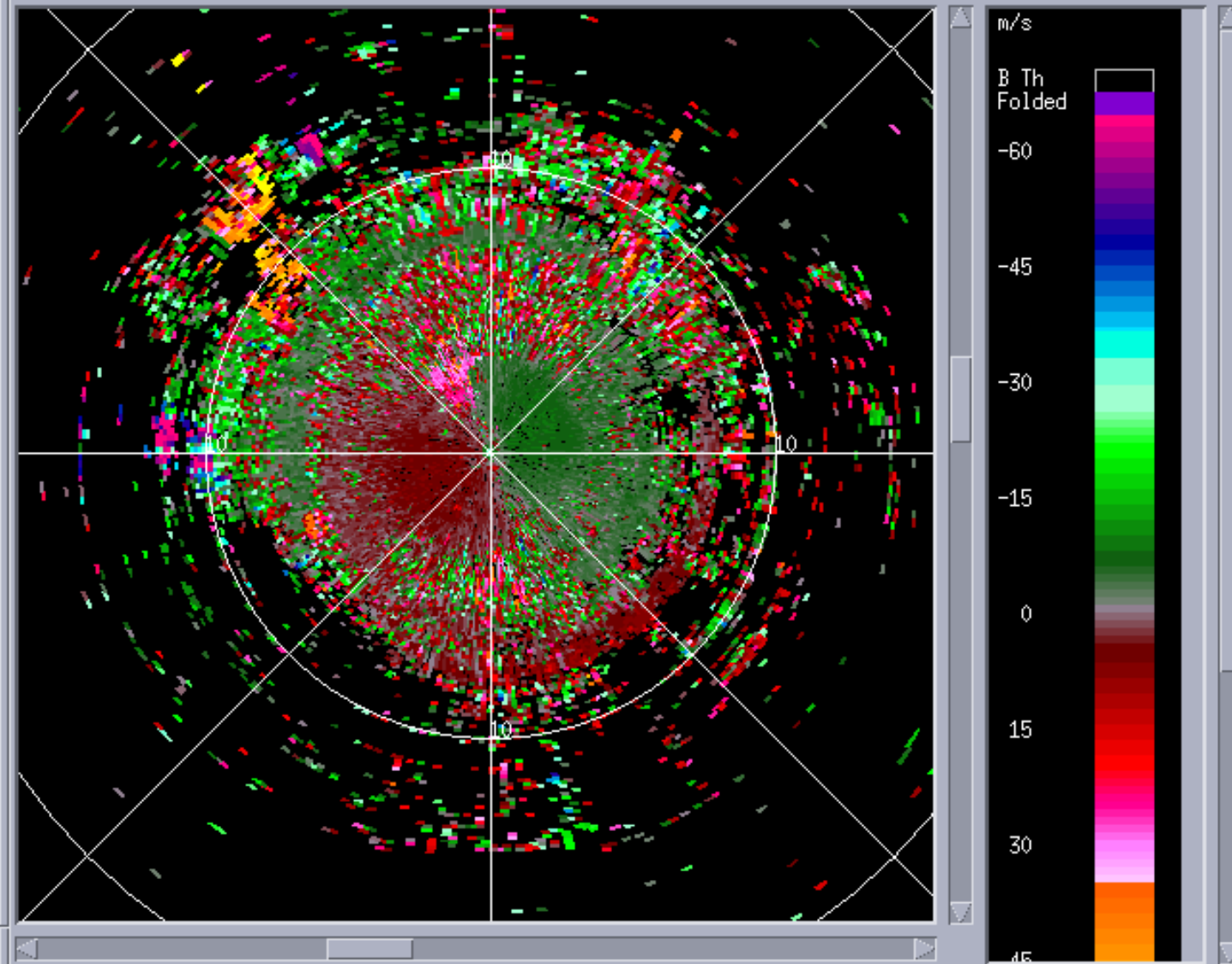
Problems Remaining

Screen 1

GAB >> Selected Data: Radial # 171 Base Product Image: 99: BVEL8BIT
X: 983 Bin # 43 00:08:00 GMT Vol #504
Y: 978 Bin Value: 123 October 5, 2004 Elev #8
Azimuth: 132.00 VCP 21 Res 0.13nm (250m)
Range: 5.67NM Site: [KCRI] Zoom 2.000
(10.50KM) Type: [WSR-88D]

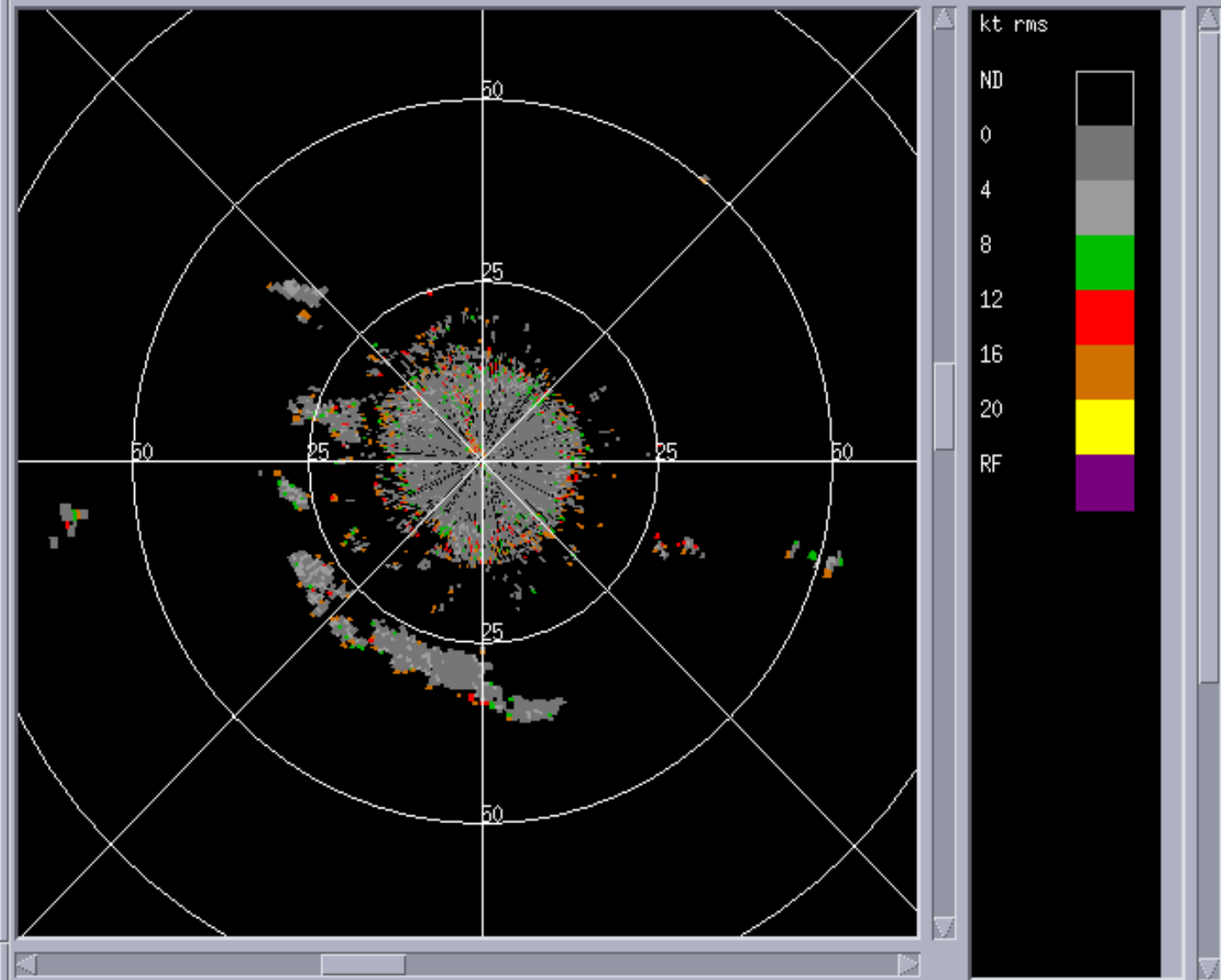
Excessively
high velocity
values at
higher tilts.

May be
related to
a threshold
problem.



Screen 1

GAB >> Selected Data: Radial # 14 Base Product Image: 10: BSPC30
X: 957 Bin # 38 00:08:00 GMT Vol #504
Y: 986 Bin Value: 0 October 5, 2004 Elev #4
Azimuth: 150.00 VCP 21 Res 0.54nm (1000m)
Range: 19.98NM Site: [KCRI] Zoom 2.000
(37.00KM) Type: [WSR-88D]



Excessively high spectrum width values at higher tilts.

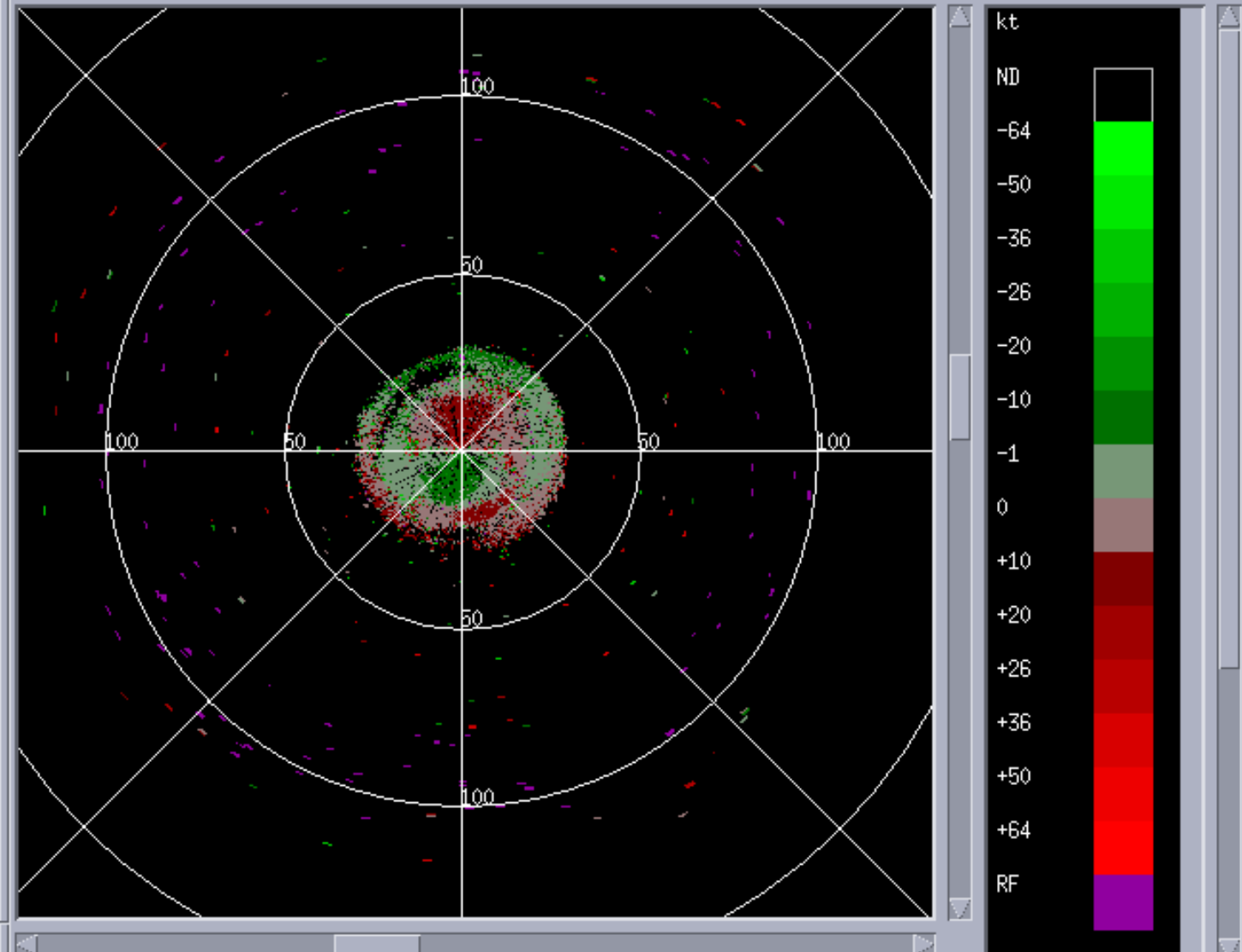
May be related to a threshold problem.

Screen 1

GAB >> Selected Data:

Base Product Image:
23:22:40 GMT
September 17, 2004
VCP 32
Site: [KCRI]
Type: [WSR-88D]

15: BVEL27
Vol #11
Elev #5
Res 0.54nm (1000m)
Zoom 1.000



Noise in
velocity and
spectrum
width upper
tilts.

May be
related to
a threshold
problem.

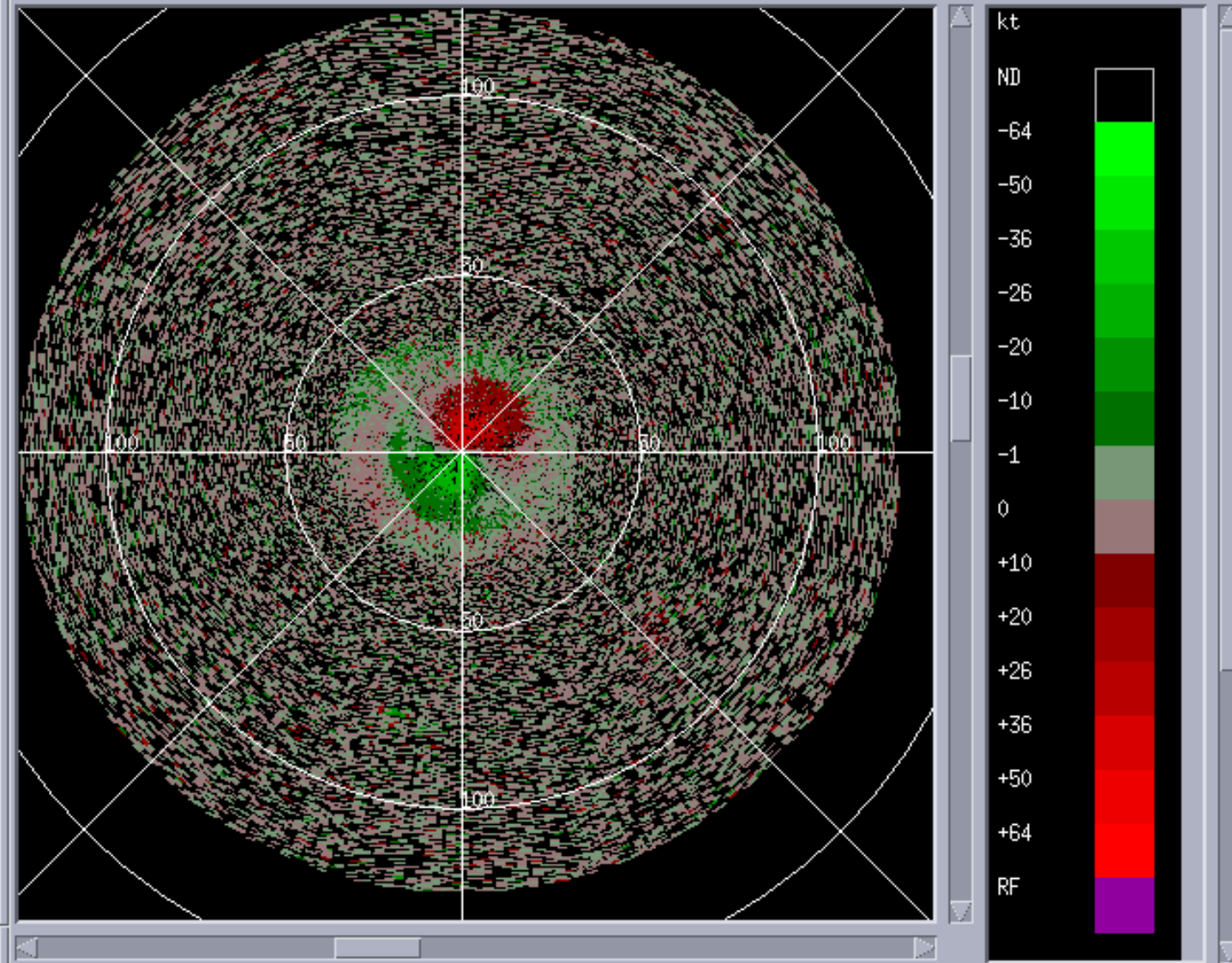
Screen 1

GAB >> Selected Data:

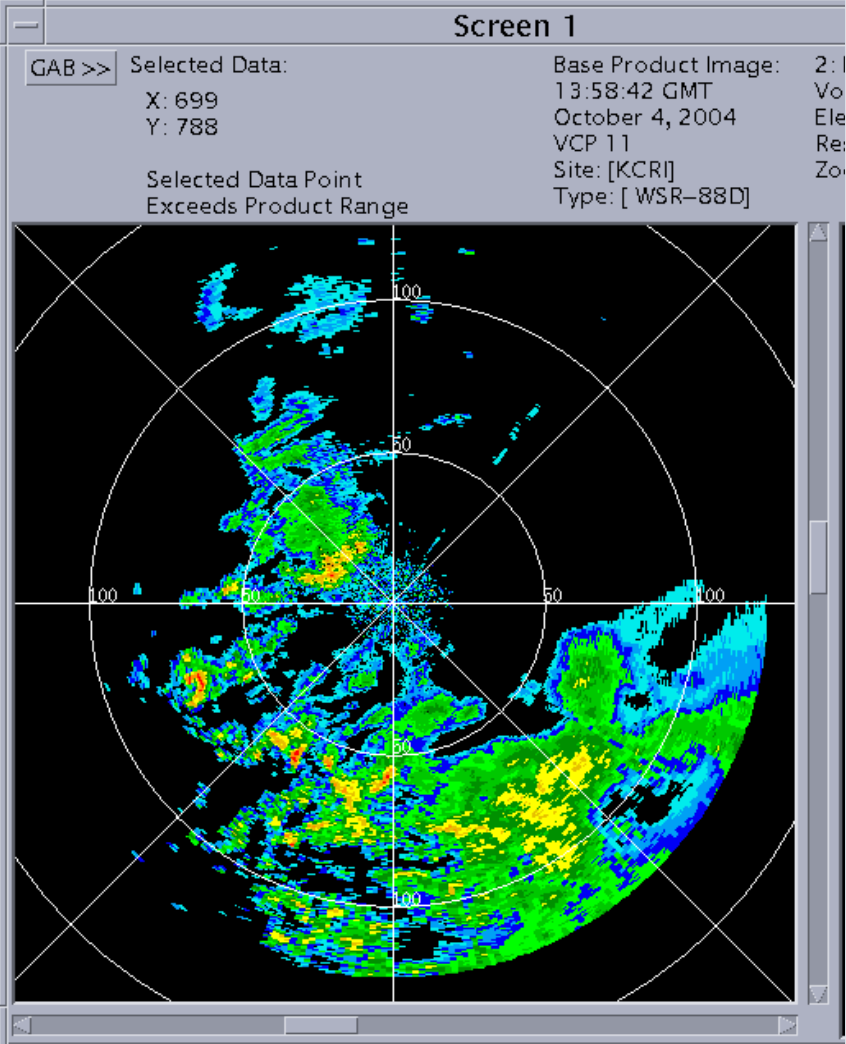
Base Product Image:
06:33:26 GMT
September 14, 2004
VCP 31
Site: [KCR1]
Type: [WSR-88D]

15: BVEL27
Vol #973
Elev #4
Res 0.54nm (1000m)
Zoom 1.000

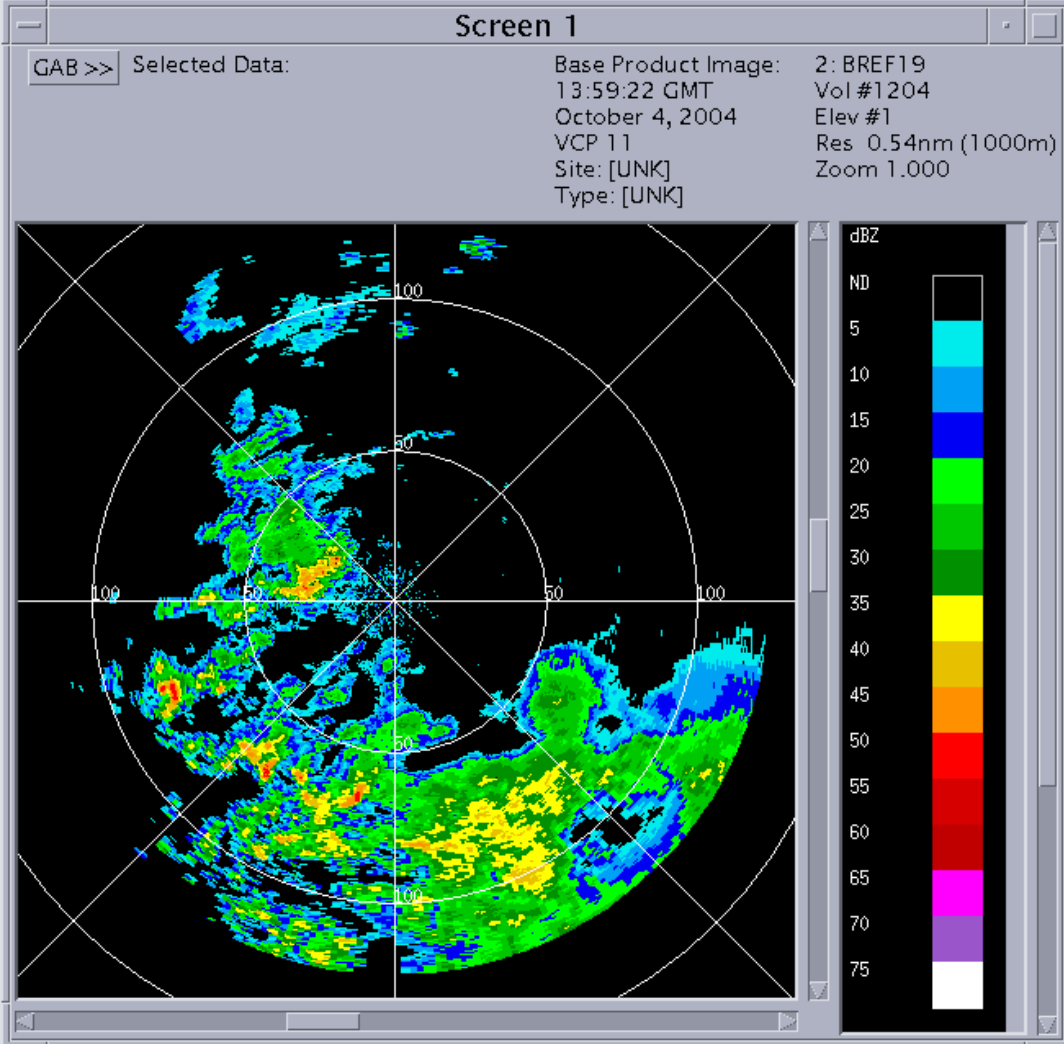
Bad velocity
values on
upper tilts
in VCP 31.



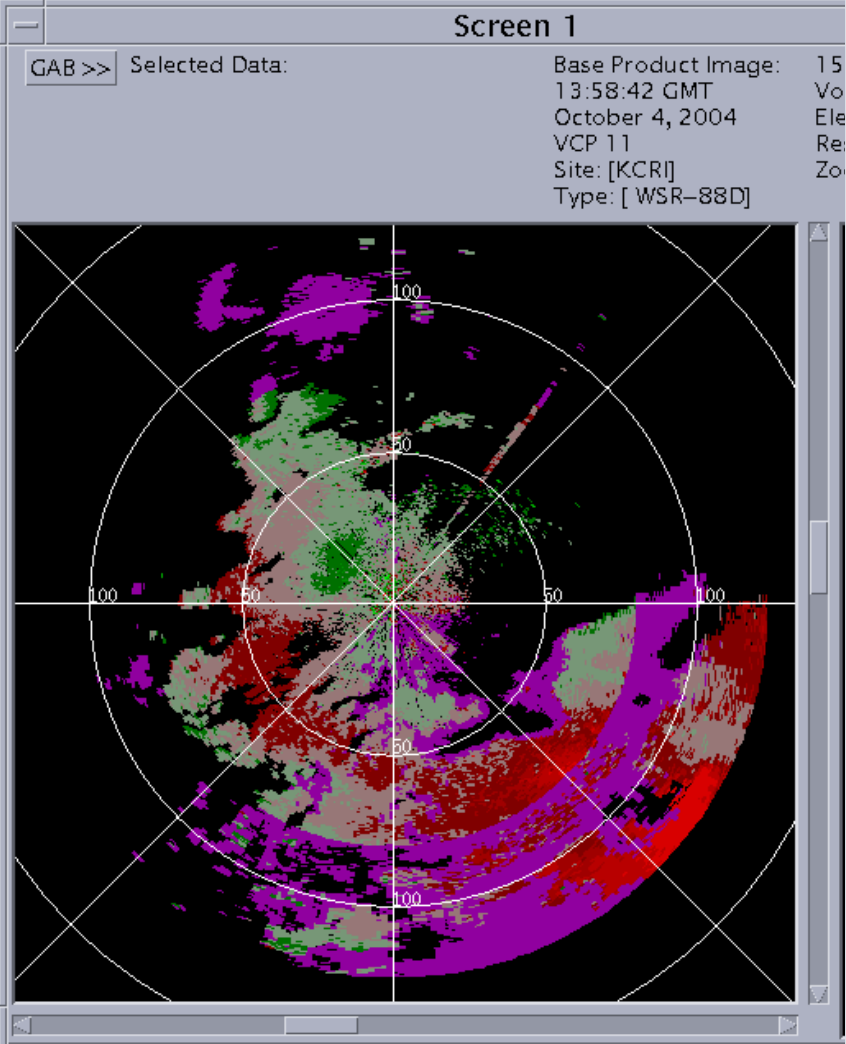
Good Looking Data



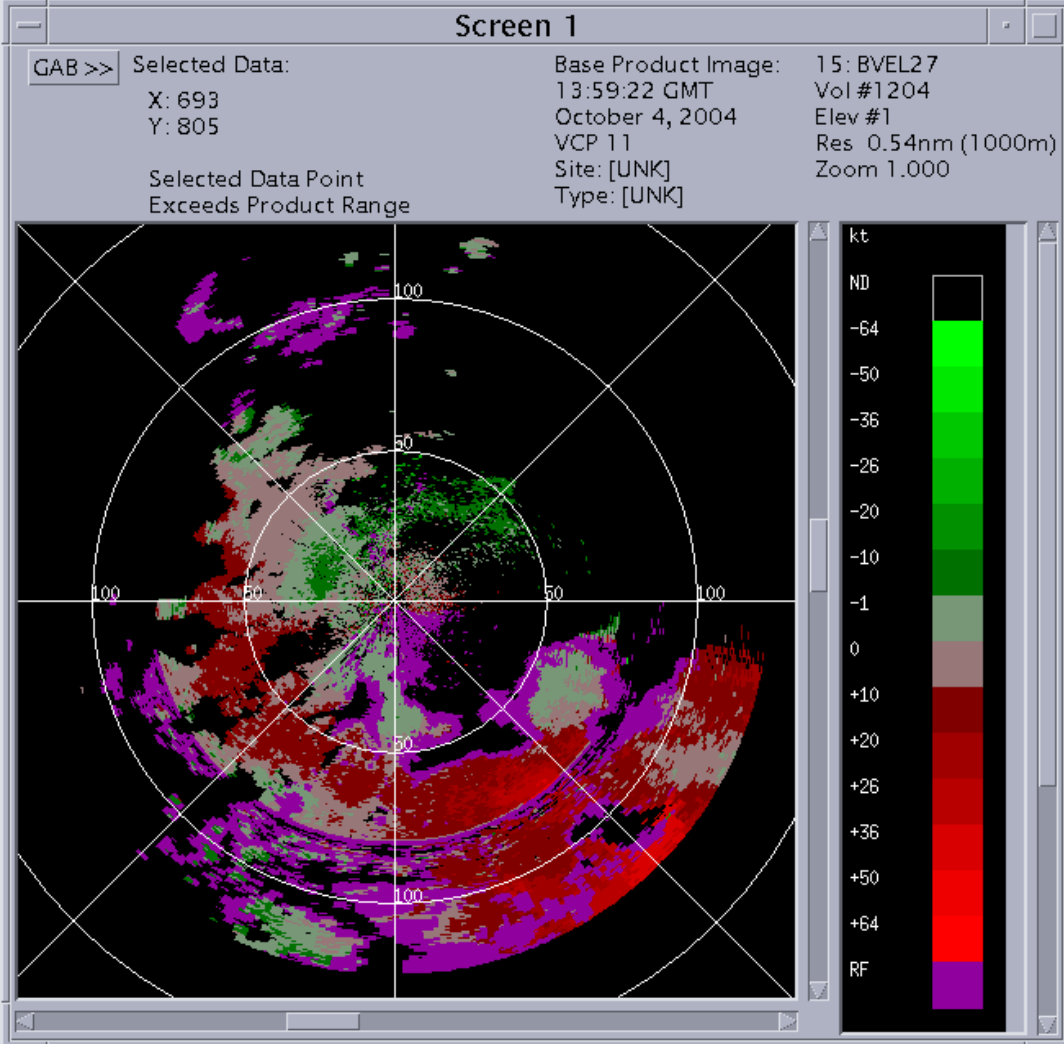
ORDA / T1
Reflectivity
VCP 11
4 October 2004
13:58:42 GMT



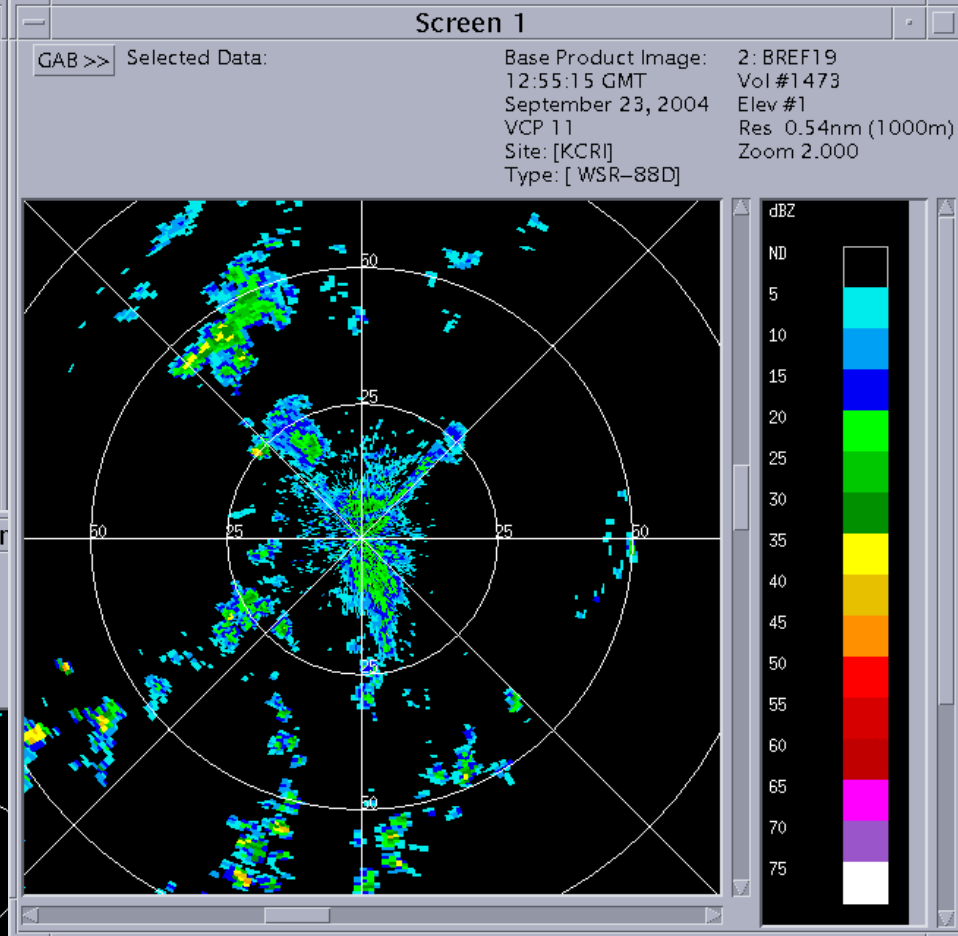
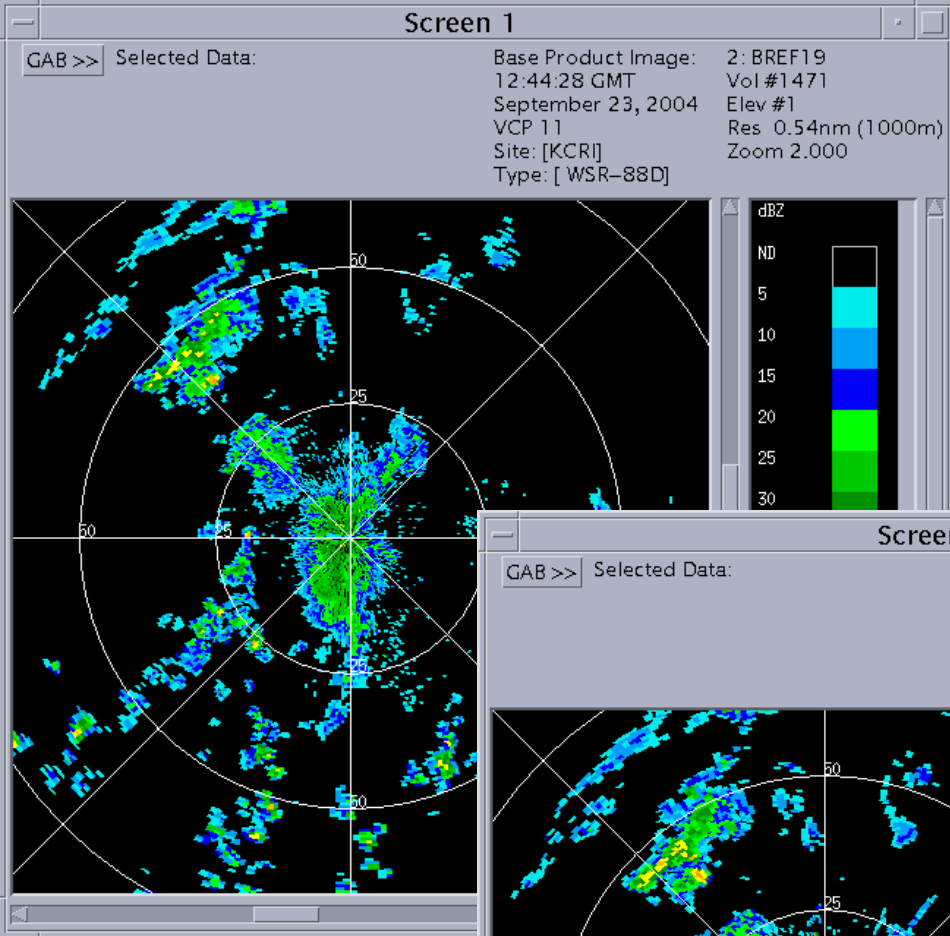
KTLX / T1
Reflectivity
VCP 11
4 October 2004
13:59:22 GMT



NOP4 / T1
Velocity
VCP 11
4 October 2004
13:58:42 GMT

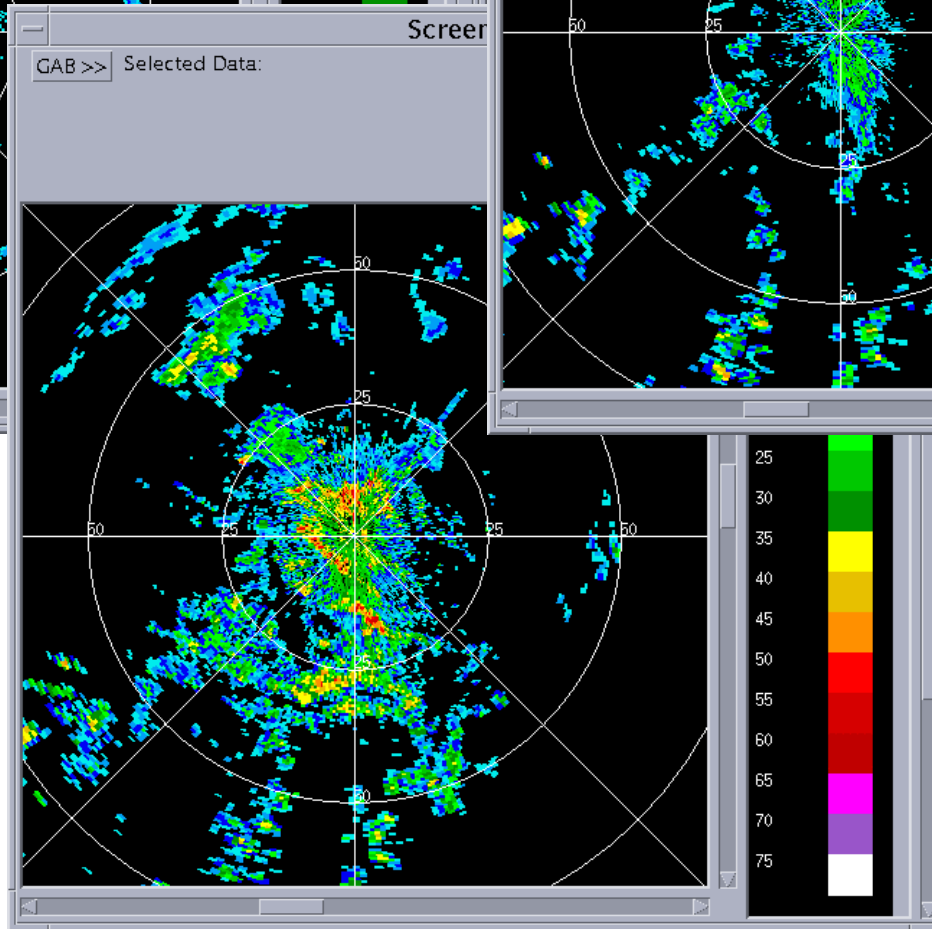


KTLX / T1
Velocity
VCP 11
4 October 2004
13:59:22 GMT



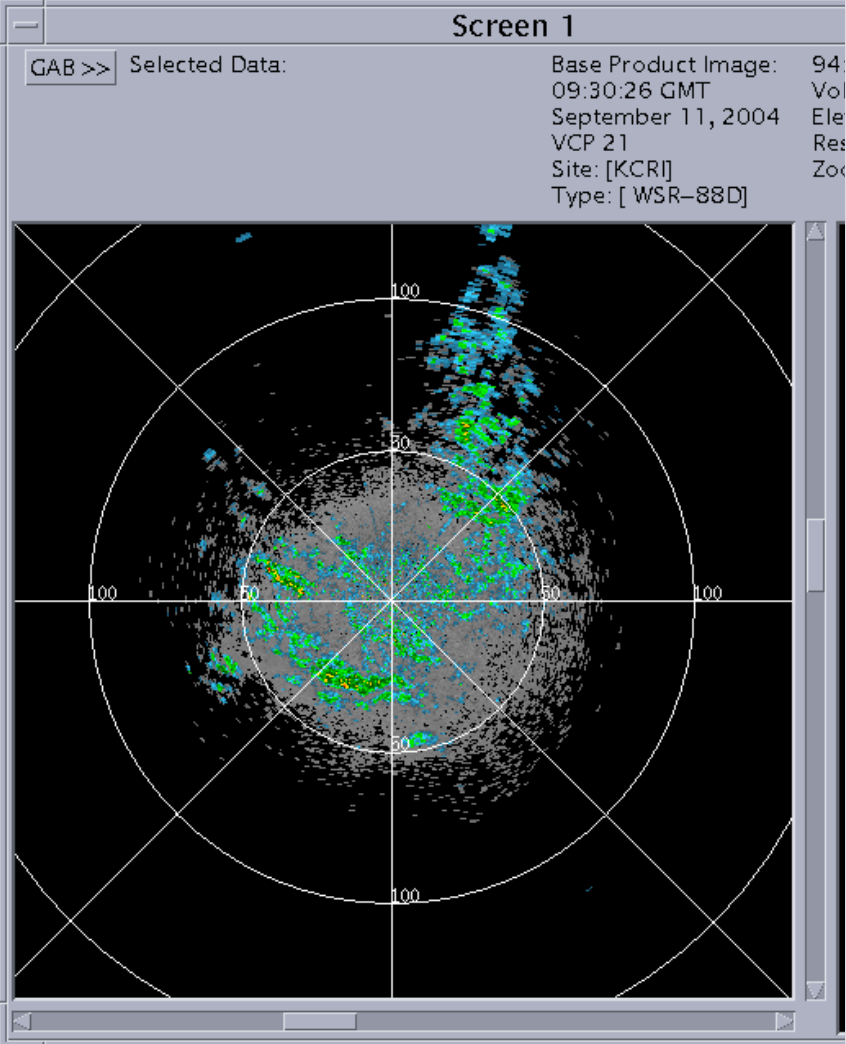
GMAP
Everywhere

Bypass map
generated in
10 to 15
minutes.



Bypass Map

GMAP Off



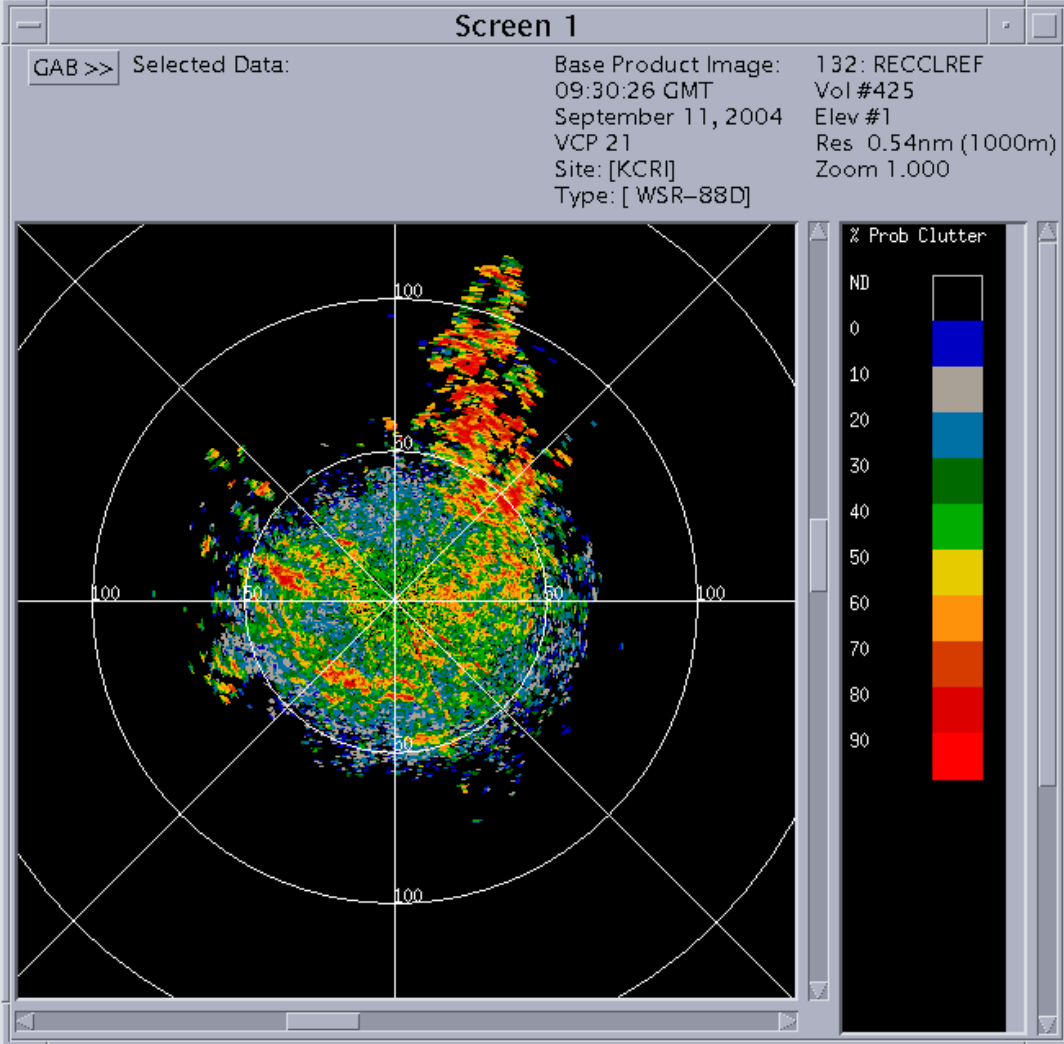
NOP4

DR

VCP 21

11 September 2004

09:30:26 GMT



NOP4

REC Algorithm CLR

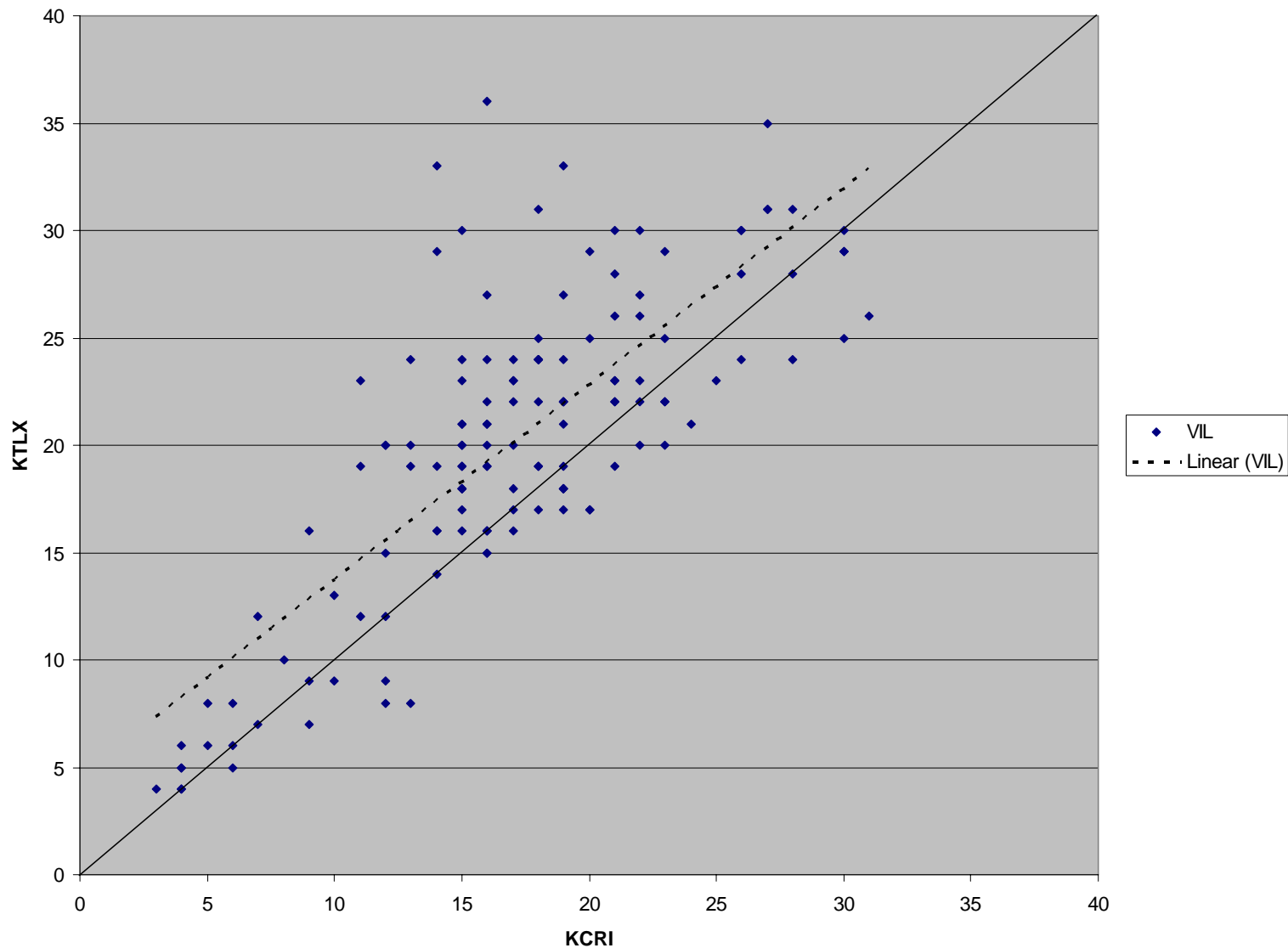
VCP 21

11 September 2004

09:30:26 GMT

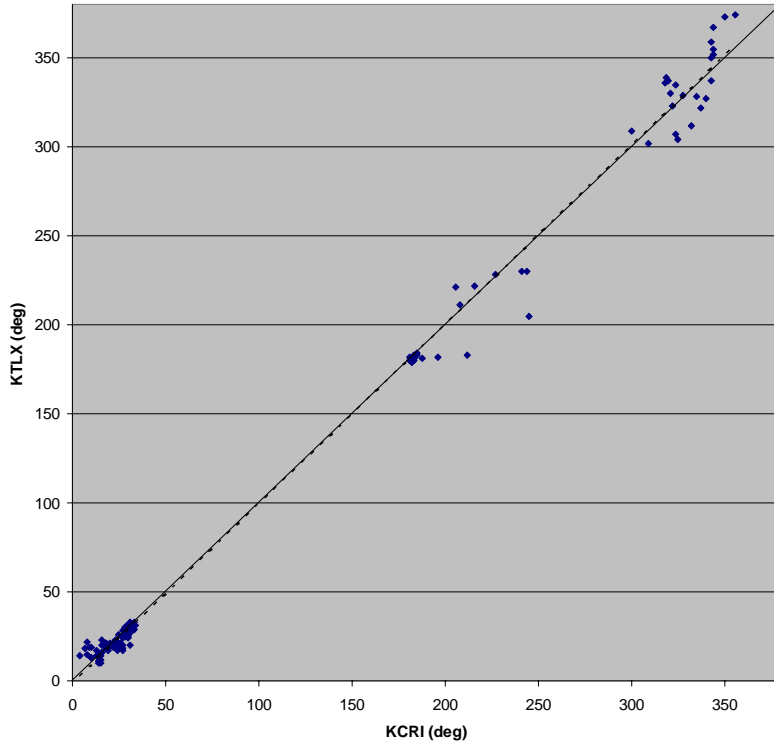
Algorithm Comparison

Vertical Integrated Liquid

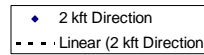


Max VIL Correlation = 0.78

VAD Wind Profiler
2,000 ft. Wind Direction



Wind Direction Correlation = 0.99



Wind Speed Correlation = 0.93

VAD Wind Profiler
2,000 ft Wind Speed

